Neural Networks I
G. Lendaris
October 13, 2003

ASSIGNMENT # 2 DUE: October 22, 2003

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Indicate how many iterations it took for the net to learn the task.

2. Repeat the above process for the "encoding problem" discussed on pages 335, et seq, of the attached material. Use a 4-2-4 configuration (modified versions of Figure 7 and Table 4, respectively).

GGL

Neural Networks I
G. Lendaris
October 13, 2003

ASSIGNMENT # 2 DUE: October 22, 2003

Use the NeuralWorks Professional II simulator and carry out the following exercises using the BackPropagation method.

1. Set up a network like the one shown in Figure 4, pg. 332 of reading material availabe on the course Web page (Rumehart & McClelland re. XOR problem). Create these networks from "scratch," rather than using the instanet capability, as this will give you more exposure to the various aspects of the simulator.

Create a data file xxxxx.nna corresponding to data given in Table 1, pg. 319 of the text (see pages RF 229, et seq, in *Reference.pdf* in your NeuralWorks directory for information on file formats).

Experiment with the network, e.g., with different starting weights, different values of training rate, momentum term, epoch sizes, etc. Study description of experimental results given in the attached text material to obtain hints for your own experimentation and learning.

Your experiments may generate a lot of data, however I want you to write a **summary** report containing a concise (and informative) description of the problem you worked on, and a summary of solutions obtained for at least 5 different parameter combination (see above enumeration).

Include in your report:

The net's initial conditions.

Use the scheme shown in Figure 5 to show your final nets' weights and threshold values.

Indicate how many iterations it took for the net to learn the task.

2. Repeat the above process for the "encoding problem" discussed on pages 335, et seq, of the attached material. Use a 4-2-4 configuration (modified versions of Figure 7 and Table 4, respectively).

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